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U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

ATTORNEY'S DOCKET NO  
FLIEGEL-2 (PCT)

TRANSMITTAL LETTER TO THE UNITED STATES  
DESIGNATED/ELECTED OFFICE (DO/EO/US)  
CONCERNING A FILING UNDER 35 U.S.C. 371

U.S. APPLICATION NO (if known, see 37 CFR 1.5)

10/070408

INTERNATIONAL APPLICATION NO  
PCT/DE00/03064

INTERNATIONAL FILING DATE  
SEPTEMBER 6, 2000

PRIORITY DATE CLAIMED  
SEPTEMBER 6, 1999

TITLE OF INVENTION

DEVICE AND METHOD FOR STICKING A LABEL TO A COMPACT DISK (CD)

APPLICANT(S) FOR DO/EO/US  
ERWIN FLIEGEL

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3. ☒ This is an express request to begin national examination procedures (35 U.S.C. 371 (f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(1).
4. ☒ A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.
5. ☒ A copy of the International Application as filed (35 U.S.C. 371(c)(2))
  - a. ☒ is transmitted herewith (required only if not transmitted by the International Bureau)
  - b. ☐ has been transmitted by the International Bureau.
  - c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☐ A translation of the International Application into English (35 U.S.C. 371(c)(2)).
7. ☐ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3)).
  - a. ☐ are transmitted herewith (required only if not transmitted by the International Bureau).
  - b. ☐ have been transmitted by the International Bureau.
  - c. ☐ have not been made; however, the time limit for making such amendments has **NOT** expired.
  - d. ☐ have not been made and will not be made.
8. ☐ A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. ☐ An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).
10. ☐ A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

Items 11. to 16. below concern other document(s) or information included:

11. ☒ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
12. ☐ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
13. ☐ A **FIRST** preliminary amendment.  
☐ A **SECOND** or **SUBSEQUENT** preliminary amendment.
14. ☐ A substitute specification.
15. ☐ A change of power of attorney and/or address letter.
16. ☒ Other items or information:

PCT/ISA/210 - Int'l. Search Report  
4 Sheets of Formal Drawings

Applicant Claims Priority under 35 U.S.C. §119 of Germany Application Nos. 199 42 471.3, 199 54 496.4, and 199 54 522.7 filed September 6, 1999, November 11, 1999, and November 12, 1999, respectively.

Claims Priority under 35 U.S.C. §120 of: PCT No. PCT/DE00/03064 filed September 6, 2000.

APPLICATION NO. (if known, see 37 CFR 1.5) <div style="font-size: 24pt; font-weight: bold; margin-left: 100px;">10/070408</div>				INTERNATIONAL APPLICATION NO PCT/DE00/03064		ATTORNEY'S DOCKET NO FLIEGEL-2 (PCT)	
<input checked="" type="checkbox"/> The following fees are submitted: <b>Basic National Fee (37 CFR 1.492(a)(1)-(5)):</b> Search Report has been prepared by the EPO or JPO... ..\$890.00 International preliminary examination fee paid to USPTO (37 CFR 1.482) .....\$710.00 Neither international preliminary examination fee paid (37 CFR 1.82) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO.....\$1,040.00 International preliminary examination fee paid to USPTO (37 CFR 1.482) and all claims satisfied provisions of PCT Article 33(2)-(4)..... \$100 <div style="text-align: right; font-weight: bold;">ENTER APPROPRIATE BASIC FEE AMOUNT =</div>				CALCULATIONS     <div style="text-align: right;">\$ 890.00</div>		PTO USE ONLY	
Surcharge of \$130.00 for furnishing the oath or declaration later than ____ 20 ____ 30 months from the earliest claimed priority date (37 CFR 1.492(e)).							
Claims	Number Filed	Number Extra	Rate				
Total Claims	26 - 20 =	- 6 -	X \$18.00	\$ 108.00			
Independent Claims	4 - 3 =	- 1 -	X \$84.00	\$ 84.00			
Multiple dependent claim(s) (if applicable)			+ \$280.00	\$			
TOTAL OF ABOVE CALCULATIONS =				\$1,082.00			
Reduction by 1/2 for Small Entity status.				\$ 541.00			
SUBTOTAL =				\$ 541.00			
Processing fee of \$130.00 for furnishing the English translation later than ____ 20 ____ 30 months from the earliest claimed priority date (37 CFR 1.492(f)).				\$			
TOTAL NATIONAL FEE =				\$ 541.00			
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31) \$40.00 per property +				\$			
TOTAL FEES ENCLOSED =				\$ 541.00			
				Amount to be: refunded		\$	
				charged		\$	

☒ Applicant claims Small Entity status.  
 a. ☒ A check in the amount of \$541.00 to cover the above fees is enclosed.  
 b. ☐ Please charge my Deposit Account No. 03-2468 in the amount of \$\_\_\_\_\_ to cover the above fees. A duplicate  
 copy of this sheet is enclosed.  
 c. ☒ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any  
 overpayment, to Deposit Account No. 03-2468. A duplicate copy of this sheet is enclosed.

**NOTE:** Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or  
 (b)) must be filed and granted to restore the application to pending status.

SEND ALL CORRESPONDENCE TO:  
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Signature  

Edward R. Freedman

Reg. No. 26,048

Express Mail No. **EL 871 452 439 US**  
 Date of Deposit **March 6, 2002**

I hereby certify that this paper or fee is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37  
 CFR 1.10, on the date indicated above, and is addressed to BOX PCT, U.S. Patent and Trademark Office, P.O. Box 2327, Arlington, VA 22202.

Lisa L. Vulpis

Revised PCT TO 16 JUL 2002  
10/070408

PATENT  
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT: ERWIN FLIEGEL-2 (PCT)  
SERIAL NO. 10/070,408  
PCT No.: PCT/DE00/03064 FILED: SEPTEMBER 6, 2000  
TITLE: DEVICE AND METHOD FOR STICKING A LABEL TO A  
COMPACT DISC (CD)

PRELIMINARY AMENDMENT

**BOX PCT**

Ass't. Commissioner for Patents  
Washington, D.C. 20231

Dear Sir:

Preliminary to Examination, please amend the above-  
identified application as follows:

IN THE SPECIFICATION

Page 1, after the title, please insert as follows:

--CROSS REFERENCE TO RELATED APPLICATIONS

Applicant claims priority under 35 U.S.C. §119 of German  
Application Nos. 199 42 472.3, 199 54 496.4, and 199 54 522.7  
filed September 6, 1999, November 11, 1999, and November 12,  
1999, respectively. Applicant also claims priority under 35  
U.S.C. §120 of PCT/DE00/03064 filed September 6, 2000. The  
international application under PCT article 21(2) was not  
published in English.--

IN THE CLAIMS

Please amend claims 9, 10, 12, 13, 16, 17, 23, and 25 as follows:

9. (Amended) The device according to claim 1, characterized in that on its jacket surface, the multi-level part (8) comprises at least one edge (18) serving for opening and closing at least one channel (19).

10. (Amended) The device according to claim 1, characterized in that the concentric channel (15) is radially communicatively connected in terms of flow with two bores (19, 20) leading up to the jacket surface (31') of the multi-level part (8).

12. (Amended) The device according to claim 1, characterized in that the jacket surface (31) of the second section (31) of the multi-level part (8) has a groove-like puncture (39) extending over the circumference of the jacket surface in the form of a ring.

13. (Amended) The device according to claim 1, characterized in that the clamping of the label (2) and/or protective film (3) is effected either by the compliance of the label (2) and/or protective film (3) or by the yieldingness of

the jacket surface (31') of the second level (31) of the multi-level part (8).

16. (Amended) The device according to claim 15, characterized in that the diameter of the second cylindrical part section (31, 31') and the diameter (D2) of the annular disk (40) are by 0.02 mm to 0.20 mm larger than the diameter of the center hole of the labels (2) and/or protective films (3).

17. (Amended) The device according to claim 15, characterized in that below the second section (31), the multi-level part (8) has a third cylindrical section (32) stepped off by an edge (18'); and that the diameter (D2) of the third level section (32) is variable between 13 mm and 45 mm.

23. (Amended) The method according to claim 19, characterized in that if a protective film (3) is used whose adhesive coating is pointing upwards, the label (2) is guided in a curved form with its imprinted side onto the adhesive coating (37) of the protective film (3) in such a way until it rests thereon in a straight line; and that the upwards pointing ends of the label (2) are subsequently lowered.

25. (Amended) The device according to claim 24, characterized in that the even surface (7) comprises at least one

pluggable positioning element (43) keeping the label (2) and/or the protective film (3) and the credit card CD (5') in a preset position.

A marked-up version is shown as Exhibit A.

Please add the Abstract, attached hereto as Exhibit B.

REMARKS

By this Preliminary Amendment, a cross-reference to related applications has been inserted in page 1. Claims 9, 10, 12, 13, 16, 17, 23, and 25 have been amended to remove the multiple dependency to avoid the surcharge associated therewith, and an Abstract is being provided. No new matter has been introduced. Entry of this amendment is respectfully requested.

Respectfully submitted,  
ERWIN FLIEGEL

By:

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ERF/llv

Enclosure: Exhibits A and B

EXPRESS MAIL NO. **EL 871 353 921 US**

Date of Deposit: July 16, 2002

I hereby certify that this paper or fee is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10, on the date indicated above, and is addressed to ASS't.  
Commissioner for Patents, Washington, D.C. 20231

Lisa L. Vulpis  
Lisa L. Vulpis

EXHIBIT A

VERSION WITH MARKINGS TO SHOW CHANGES MADE  
TO CLAIMS 9, 10, 12, 13, 16, 17, 23, and 25

9. (Amended) The device according to [any one of the preceding claims] claim 1, characterized in that on its jacket surface, the multi-level part (8) comprises at least one edge (18) serving for opening and closing at least one channel (19).

10. (Amended) The device according to [any one of the preceding claims] claim 1, characterized in that the concentric channel (15) is radially communicatively connected in terms of flow with two bores (19, 20) leading up to the jacket surface (31') of the multi-level part (8).

12. (Amended) The device according to [any one of the preceding claims] claim 1, characterized in that the jacket surface (31) of the second section (31) of the multi-level part (8) has a groove-like puncture (39) extending over the circumference of the jacket surface in the form of a ring.

13. (Amended) The device according to [any one of the preceding claims] claim 1, characterized in that the clamping of the label (2) and/or protective film (3) is effected either by the compliance of the label (2) and/or protective film (3) or by the yieldingness of the jacket surface (31') of the second level (31) of the multi-level part (8).

16. (Amended) The device according to [any one of the preceding claims] claim 15, characterized in that the diameter of the second cylindrical part section (31, 31') and the diameter (D2) of the annular disk (40) are by 0.02 mm to 0.20 mm larger than the diameter of the center hole of the labels (2) and/or protective films (3).

17. (Amended) The device according to [any one of the preceding claims] claim 15, characterized in that below the second section (31), the multi-level part (8) has a third cylindrical section (32) stepped off by an edge (18'); and that the diameter (D2) of the third level section (32) is variable between 13 mm and 45 mm.

23. (Amended) The method according to [any one of the preceding claims] claim 19, characterized in that if a protective film (3) is used whose adhesive coating is pointing upwards, the label (2) is guided in a curved form with its imprinted side onto the adhesive coating (37) of the protective film (3) in such a

way until it rests thereon in a straight line; and that the upwards pointing ends of the label (2) are subsequently lowered.

25. (Amended) The device according to [any one of the preceding claims] claim 24, characterized in that the even surface (7) comprises at least one pluggable positioning element (43) keeping the label (2) and/or the protective film (3) and the credit card CD (5') in a preset position.



EXHIBIT B

ABSTRACT OF THE DISCLOSURE

ABSTRACT OF THE DISCLOSURE

The invention relates to a device for sticking a label and/or a protective film to a compact disk or a credit card CD (5') or a DVD CD (5''). The labels contain individual markings which are especially suitable for the use of small quantities of compact disks. The inventive device consists of a flat base body (1, 1') with an even surface. A centrally positioned, multi-level part performs several functions, especially accurately centering the labels and/or the protective films to be applied.

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Rec'd PCT/TO 16 JUL 2002  
10/070408

DEVICE AND METHOD FOR STICKING A LABEL TO A  
COMPACT DISC (CD)

The present invention relates to a device and a method for attaching a label and/or a protective film to a compact disc to the side opposing the side carrying the information, in particular with the use of a flat device that permits attaching a label containing individual markings to the surface of a compact disc, and which is well-suited for private use.

Such devices are known in the prior art from DE 298 19 707 U1. The known device comprises a base body with a plane surface facing upwards, which is penetrated by a multi-level part that is guided in a drilled hole located in the center of the base body. The multi-level part of the known device is acted upon by a nonlinear resetting force acting in the direction leading out of the plane surface. The diameter of the upper level section of the axially displaceable multi-level part corresponds with the diameter of the center hole of a compact disc. The diameter of the lower level section adjoining the top section is comparatively much larger than the diameter of the upper level section and amounts to about 41 mm, which corresponds with the center, data-free part of a compact disc. It is perceived as being a drawback in connection with the known device that for attaching a lettered label to the side of a compact disc located



diameter of the center hole is relatively large vis-à-vis the inside diameter of the center hole of the compact disc. This circumstance is perceived as being disadvantageous by the user because a considerable part of the usable surface area of the compact discs is lost. Another shortcoming of this known device has to be seen in the fact that air bubbles are formed between the label and the compact disc due to the fact that the label has a curved shape as it is being positioned on the surface to which it is glued. Moreover, the volume of the entire structure of this device is relatively large, which makes it unattractive to use this device for labeling small quantities of information carriers that have to be individually marked.

Therefore, the problem of the present invention is to provide a flat device and a simple method, by which labels and/or protective film materials can be attached to a compact disc or a credit card CD or a DVD CD in a precise manner and free of bubbles, and the labeling cost can be kept low.

Said problem is solved according to the invention by the characterizing features of the independent claims. Further features essential to the invention are specified in the dependent claims.

The device as defined by the invention for attaching labels and/or protective film to the side of a compact disc or credit card CD or DVD CD located opposite the side carrying the information, is comprised of a flat base body with a plane surface that is penetrated by a multi-level part than can be displaced in the axial direction, and engaged with the center hole of the label and/or of the protective film and of the compact disc to be labeled, and is characterized by a first level section of the multi-level part that briefly keeps the plane of the side of the compact disc to be labeled at a defined distance (A) from the plane surface of the base body; and by a second level section, the jacket surface of which engages the center hole of the label and/or protective film in a clamping manner.

An important advantage of the device as defined by the invention has to be seen in that the outside diameter of the second level section of the multi-level part can be enlarged to any desired extent by attaching an annular disk.

It is particularly advantageous and important in this connection that the outside diameter of the second level section is slightly larger than the diameter of the center hole of the label and/or protective film to be applied, so that the center hole of the label and/or protective film to be attached is engaged with the jacket surface of the second

level section or the outside diameter of the annular disk in a clamping manner.

In order to effect the clamping of the center hole of the label on the second level segments of the multi-level part, it is advantageous if the diameter of the second level segment is made slightly larger than the diameter of the center hole of the label. It is advantageous for this purpose, among other things, if the jacket surface of the second level segment is provided with a slightly spherical shape, so that the label to be attached will be in a clamping engagement with the jacket surface as a result of the yielding property of the material of the label.

Furthermore, it is advantageous if the clamping of the labels and/or protecting films is effected by radially springy elements.

An important advantage of the present invention has to be viewed in the fact that it is possible with the help of the device as defined by the invention to attach to compact discs labels or protective films having a center hole that approximately corresponds with the central hole of the compact disc.

It is advantageous, furthermore, that the plane surface has at least one drilled hole that is communicatively

connected in terms of flow with the vacuum channels located below the plane surface, so that the labels and/or protective films to be attached are pulled smoothly onto the plane surface due to the vacuum. This assures that the labels are attached in a precise and bubble-free manner.

Furthermore, it is advantageous if a linear spring force is admitted to the multi-level part. This causes the multi-level part to project from the plane surface in the resting position.

The multi-level part comprises on its jacket surface at least one edge serving the purpose of effecting the opening and closing of the vacuum channels below the plane surface. It is advantageous if the device as defined by the invention is provided with two radial bores leading up to the jacket surface of the round, multi-level part. It is important in this connection that the longitudinal axes of the radial bores are offset to a certain extent, i.e. that the longitudinal axes are not disposed in one plane parallel with each other. The amount of such an offset depends on the size of the cylinder-shaped part piece of the round, axially displaceable multi-level part.

One of the radial bores advantageously serves the purpose of evacuating the channel system, and the other radial bore the purpose of ventilating the channel system. At one end of



the channel system provided for evacuating this system, provision is made for a connection serving the purpose of attaching a vacuum hose, which is connected with a mechanical pump not shown here. This pump may be any type of a vacuum pump, even a mouthpiece to which suction is applied.

An advantageous realization of the multi-level part has to be seen in that said multi-level part has a first tapering segment, the diameter of which corresponds with the diameter of the center hole of a compact disc. Below said first segment is adjoined below by a second tapering segment. The diameter of this second tapering segment is slightly larger (0.05 to 0.02 mm) than the diameter of the center hole of the label and/or protective film. This measure of slightly increasing the diameter of the second level segment of the multi-level part substantially enlarges in an advantageous manner the surface area of the label to be provided with lettering.

The lower surface of the base body advantageously comprises a coating made of a soft material whose supporting surface is smooth. This material may be a moss rubber or some other foam material or a felt material. Owing to the smooth supporting surface it is made possible to cover the entire surface of the label with the smooth surface of the coating consisting of soft material after the label and/or

the protective film have been attached, in order to assure in this manner that the label is glued on free of any air bubbles.

The method as defined by the invention for attaching labels and/or protective film materials to the side of a compact disc or credit card CD or DVD CD opposing the side carrying the information is characterized by the following steps of the method:

- Putting the label and/or protective film with the side opposing the adhesive coating onto the even surface of a flat base body that is penetrated by a multi-level part, the second level segment of which engages the center hole of the label and/or protective film in a clamping manner;
- complete lowering of the compact disc onto the slightly curved adhesive layer of the label and/or protective film; and
- lifting off of the compact disc with the label and/or protective film glued to it.

In detail, the gluing process takes place as follows: The label and/or the protective film are first placed on the plane surface of the flat base body, whereby the adhesive coating of the film or label has to be pointing upwards. When a vacuum system is employed, the vacuum channel system

subsequently has to be evacuated, so that the labels and/or the protective films will smoothly abut the plane surface. With its side to be glued, the compact disc to be labeled subsequently has to be placed on the first level segment in the direction of the adhesive coating, so that said level segment loosely engages the center hole of the compact disc. After the compact disc has been held for a short time above the adhesive coating of the CD label at a predetermined distance (A) from the latter, the compact disc has to be lowered onto the adhesive coating by applying pressure to the multi-level part. Due to the lowering of the pin, the edges of the cylinder-shaped third segment move successively one after the other past the radial bores of the vacuum channel system. The evacuation bore is closed first in this process, and the opening of the ventilating bore is released as the pin is lowered further, which effects ventilation of the channel system.

In case the flat base body is not equipped with a vacuum system, it suffices to keep down the label and/or protective film to be attached on the second level segment of the multi-level part with the clamping force exerted by the label, and to then lower the compact disc.

The invention is explained in greater detail in the following with the help of drawings, in which:

FIG. 1 is a schematic side view of the device as defined by the invention, comprising the base body (1) and the multi-level part (8) and the compact disc (5) to be provided with the label (2) and a protective film (3).

FIG. 2 is a schematic top view of the base body (1) with the vacuum channel system (14, 15, 19, 20).

FIG. 3 is a schematic side view of the device as defined by the invention, with the base body (1') and the multi-level part (8') and an annular disk (40) and a compact disc (5) to be provided with a label (2) and a protective film (3).

FIG. 4 is a schematic top view of the base body (1') with the vacuum channel system (14, 15, 19, 20).

FIG. 5a is a schematic top view of the base body (1') with a credit card CD (5').

FIG. 5b shows an exemplified embodiment of the positioning element (21) in the base body (1, 1').

FIG. 6 is a side view of an exemplified embodiment of the multi-level part (8).

FIG. 7 shows another exemplified embodiment of the multi-level part (8') with two levels.

FIG. 8 shows an exemplified embodiment of the multi-level part (8'').

FIG. 9 shows an exemplified embodiment of the multi-level part (8''') comprising three levels and a ring-shaped notch (39); and

FIG. 10 shows an exemplified embodiment of the multi-level part (8') as defined by the invention, which is suitable for expanding the diameter (D2) of the second level segment (31).

FIG. 1 shows a schematic representation of the side view of the device as defined by the invention for labeling a compact disc 5. The device is comprised of a base body 1 which, in the present representation, is arranged on the upper side of an even surface 7, on which either a label 2 and/or a protective film 7 is placed. With the help of the multi-level part 8, which has a centering effect, the compact disc 5 to be labeled is placed on the first level section 30, which is loosely in engagement with the center hole 12 of the compact disc 5. The side 6 of the compact disc 5 to be provided with a label 2, is disposed opposite the side of the compact disc carrying the information, and

thus in the direction of the adhesive layer 37 of the label 2 or the adhesive layer 37' of the protective film. The even surface 7 of the base body 1 is terminated with a chamfer 4. So as to assure that the label 2 and/or the protective film 3 will smoothly abut the plane 7, the latter is provided with a bore 14, which is in connection with the entire channel system for evacuating the masses of air. The even surface 7 usefully comprises a plurality of the bores 14, which are arranged in a perforated circle 16. A puncture 15 connecting the bores 14 among each other is arranged along the perforated circle 16. The evacuation channel 15 or puncture in the underside of the base body 1 is sealed with a film 34. Such a sealing is adequate because the vacuum is not required to meet any higher requirements. The entire channel system also comprises the two additional radial bores 19, 20. The center axes 26, 27 of these bores are not disposed in one plane but have a defined offset that suffices for breaking the vacuum in the channel system when the multi-level part 8 is moved from the resting position because the edge 18 in the jacket of the multi-level part 8 releases the opening of the bore 19. This permits air to flow into the entire channel system and thus also into the drilled hole 20, which in turn is in connection with the puncture 15. For producing an adequate vacuum in the channel system it suffices to insert a small vacuum hose in the connection bush 29 at the end of the bore 20. The vacuum hose, which is not shown here, is connected with a simple

mechanical, favorably priced vacuum pump, which is operating while the labels are being attached. The offset of the longitudinal axes 26, 27 of the radial bores 19, 20 is important because as the CD label 2 is being glued to the compact disc 3, smooth abutment of the label 2 or protective film 3 to the plane surface 7 should be assured. Only when the multi-level part 8 is lowered further, the section edge 18 will be received in the opening of the radial bore 19, so that the vacuum in the channel system is now broken, which causes the force of suction applied to the protective film 3 or the label 2 to be practically cancelled. When lifting takes place again by the spring force of the linear-elastic element 21, the compact disc 5 with the glued-on label or the glued-on protective film 3 is lifted and released for removal. The one end 23 of the linear-elastic element 21 is supported on a base plate 25, and its other end 22 on the upper end of the recess 24. A layer 36 consisting of soft material is worked into a shallow recess on the bottom side 35 of the base body 1, whereby the soft material is a foam rubber, as a rule. The supporting surface 36' of the soft material 36 should be smooth and should have the property of keeping the frictional forces between a smooth surface, for example the surface of the label 2 and/or protective film to be attached, low, so that the smooth surface of the label 2 can be coated in a simple manner and without expending force.

FIG. 2 shows a schematic top view of the base body 1, showing the course of the vacuum channel system. In the present exemplified embodiment, the base body 1 is a flat, round disk with a diameter of about 125 mm. The multi-level part 8, which is described in greater detail below, is located in the center. The bores 14 extending perpendicular to the plane surface 7 are disposed in a perforated circle 16, whose projection is congruent with the centerline of the channel 15. The channel 15 connects the bores 14 among each other and, in terms of flow, is also communicatively connected with the radial bores 19, 20. The radial bore 20, on whose outer end 28 provision is made for a vacuum hose connection 29, leads with its other end up to the cylindrical part section 32 of the multi-level part 8, so that the opening of said radial bore 20 is only partly closed as long as the multi-level part 8 is in the resting position, i.e. as long as the multi-level part 8 is not actuated in the longitudinal direction and moving downwards. Furthermore, the radial bore 20 is communicatively connected in terms of flow with the channel 15. The radial bore 19 serves for evacuating the entire channel system. The vacuum system is ventilated as soon as the opening of the bore 19 is released by completely pushing the multi-level part 8 down.

FIG. 3 shows a schematic side view of another exemplified embodiment of the present invention. Except for the multi-



level part 8', the entire structure is the same as the one described for FIG. 1, so that the mode of operation of the multi-level part 8' is substantially described here. The first and the second level sections 30, 31 are identical with the first and the second level sections of the multi-level part 8 of FIG. 1. The third level section 32, which is located below the second level section 31, has a relatively large support surface 42, whose diameter amounts to approximately 41 mm. Said diameter (D2) is identical with the diameter of a ring disk 40 to be attached, whose diameter is tapering upwards. The diameter of the second level section 31 corresponds with the diameter (D1) of the inside diameter of the ring disk 40 and is identical with the height of the second level section 31. The support surface 42 is flush with the plane surface 7, so that hardly any transition is noticeable at the points of contact. With said multi-level part 8' as defined by the invention, and the ring disk 40 it is possible to glue to the compact disc 5 labels or protective films with different inside diameters. If the inside diameter is approximately corresponding with the diameter of the center hole of the compact disc, the device as defined by the invention can be used without the ring disk 40. If the inside diameter of the center hole 10 of the label or the protective film is much very larger than the diameter of the center hole of the compact disc 5, it is necessary to attach the ring disk 40 with a corresponding diameter, so that different types of

labels can be used in this way. In the present exemplified embodiment, the edge 18 of the third level section 32 is disposed slightly lower than the support surface 42 of the level section 32. A limiting stop is formed in this way for the multi-level part 8'. The entire multi-level part 8' is guided in the bore 33'.

FIG. 4 shows a schematic top view of the base body 1' with the vacuum channel system of the bores 14, 15, 19, 20, and the multi-level part 8' in the center of the base body 1'. The diameter (D1) is the effective diameter of the second level section 31, and the diameter (D2) corresponds with the outside diameter of the ring disk 40 or the diameter of the support surface 42 of the third level section 32.

FIG. 5a shows a top view of a base body 1' with a credit card CD 5', to which a label to be marked and/or a protective film have to be attached. Since the device as defined by the invention is suitable both for compact discs and for credit card CD's 5' and for DVD CD's 5'', only a few manipulations are required according to the invention in order to install at least one positioning element 21 on the surface of the plane surface 7 for labeling a credit card CD. In the present exemplified embodiment, the positioning element 21 is inserted in a bore provided for that purpose, so that said at least one positioning element 21 defines the

position of the credit card CD 5'. It is advantageous in some cases of application to insert more than one positioning element 21 in the even surface 7 in order to make the work easier for the user.

FIG. 5b shows the cross section of one single positioning element 21 along its axis. At the lower end, the positioning element 21 advantageously has a pin 44 that is inserted into a blind bore 45 in the surface of the even plane 7. The cross section perpendicular to the longitudinal axis of the positioning element 21 may have any advantageous shape and is round in the present case. However, the recess 45 or the pin 44 should require the positioning element 21 to assume a defined preset position in order to make it easier for the user to position the credit card CD 5' to which a label has to be glued. For the purpose of finding the correct position of the credit card CD, the positioning element 21 has a gradient 46 extending from the upper end of the positioning element downwards to such an extent that the credit card CD 5' put on can be positioned without problems. The measure for the distance from the even surface 7 up to the gradient 46 is preset by the height of the second level section 31.

FIG. 6 shows an exemplified embodiment of the multi-level part 8 by a sectional representation along the longitudinal axis. The multi-level part 8, which is shown as a round part, as a rule, comprises the three sections 30, 31, 32,

whereby the first section 30 is composed of a cylindrical part and a conical part. The borderline between the cylindrical and the conical parts may be flowing. Important is that the cross sectional area of the section is tapering upwards. The tapering serves the purpose of getting the center hole of the compact disc 5, 5', 5'' lined up in a better way. The cylindrical part of the first section 30 has a diameter corresponding with the inside diameter of the center hole of a conventional compact disc 5 and amounts to about 15 mm. The cylindrical part of the first part section 30 is limited by a step 18'. This step has the effect that the compact disc 5 put on is kept for a short time at a defined spacing (A) from the even surface 7 of the base body 1 or the adhesive coating 37 of the lettered CD label 2. For a short time means as long as the multi-level part 8 is not axially actuated against the spring force of the linear elastic element 21. The first tapering section 30 is adjoined below by the part section 31, which is tapering as well and again comprises a cylindrical part section and a conical part section. The cylindrical segment of this second level section 31 has a diameter approximately corresponding with the diameter of the center holes of the labels 2 and/or protective films 3. The diameter of the cylindrical part segment of the level section 31, however, is slightly larger, i.e. about 0.02 to 0.2 mm larger than the diameter of the center hole 10 of the label 2 and/or protective film 2 to be attached. The slightly enlargement of the diameter

of the cylindrical part section 31 effects a clamping between the label and/or protective film to be applied. Such clamping is absolutely necessary so that the label 2 and/or the protective film 3 is maintained in a defined position, which provides for good handling and user friendliness of the device as defined by the invention. The second level section 31 is adjoined underneath by the third level section 32. The diameter of the latter is basically freely selectable and, in the present exemplified embodiment, amounts to about 18 mm. Said third level section 32 is cylindrical and is not tapered. The edge 18 of the cylindrical level section 32 serves for controlling the vacuum conditions within the vacuum system, as it has been described already above. The height of said cylindrical level section 32 is selected in such a way that in the resting position, the jacket surface of said cylindrical level section 32 completely closes the opening of the radial bore 19 and only partly covers the opening of the radial bore 20. The recess 24 accommodates the elastic element 21, which is guided on the walls of the recess 24.

FIG. 7 shows a cross sectional view of another exemplified embodiment of the multi-level part 8' as defined by the invention. The lower cylindrical level section 32 is identical with the one of FIG. 6. It is adjoined upwards by a tapering level section 31'. At the lower end, the

truncated cone-like level section 31' has the diameter of the center hole of the compact disc 5, 5', 5'' to be marked.

FIG. 8 is a cross sectional representation of another exemplified embodiment of a multi-level part 8'' as defined by the invention. The lower part section 32 is identical with the one of FIGS. 3 and 4. The recess 24, in which the linear-elastic element 21 is accommodated, is identical as well. The exemplified embodiment of the multi-level part 8'' is similar to the one of FIG. 6, whereby the level sections 30 and 32 are identical. However, the center level section 31 has a puncture in its lower area. The cross section of this puncture may have any desired shape and extends as a groove in the form of a ring over the circumference of this section 31. With another form of the jacket 31' of the level section 31, the latter is slightly spherical, so that the largest diameter (D1) is slightly greater than the diameter of the center hole of the label 2 and/or protective film to be applied. These designs of the jacket surface 31' keep the label 2 to be applied down, on the one hand, and permit the label to turn on the other because the diameter (D1') is smaller than the diameter of the center hole of the label 2.

FIG. 9 shows a cross sectional view of yet another exemplified embodiment of the multi-level part 8''' as defined by the invention along the longitudinal axis. The first and the second level sections 30, 31 are identical

with those shown in FIG. 6 or 8, so that these sections need not to be described here in greater detail. The lower level section 32 has a relatively large diameter (D2), whereby the measure of the diameter (D2) approximately corresponds with the diameter of the information-free area of a compact disc 5. Said diameter (D2) amounts to about 41 mm. The level area 42 of the level section 32 is flush with the even surface of the base body 1'. The edge 18 is not flush with the area 42 of the level section 32 because of the annular groove 43. The effect of the edge 18 has been described above.

FIG. 10 is a schematic top view of another exemplified embodiment of a level section 31 of the multi-level part 8. In order to obtain the preferred clamping effect of the center hole of the label 2 and/or the protective film 3, it is necessary to mount at least one spring element 46 on the outer jacket circumference 31'. The spring elements 46 are acting radially outwards with a low force (F), which produces the clamping effect. The level section 31 usefully comprises three spring elements 46 on the circumference of the jacket 31'.





with the diameter of the center hole (12) of a compact disc (5, 5', 5'').

4. The device according to claim 1, characterized in that below the first section (30), the multi-level part (8) has a second tapering section (31) whose jacket surface (31') is slightly spherical and whose diameter is slightly larger than the diameter of the center hole (10, 11) of the label (2) and/or protective film (3).

5. The device according to claim 1, characterized in that below the second section (31), the multi-level part (8) has a third cylindrical section (32) stepped off by an edge (18') extending flush with the even surface (7) of the base body (1, 1').

6. The device according to claim 1, characterized in that the base body (1, 1') comprises a recess (33, 33') in which the cylindrical section (32) is guided in an axially displaceable manner.

7. The device according to claim 1, characterized in that on the side (35) opposing the even surface (7), the base body (1, 1') comprises a layer (36) consisting of soft material and having a smooth support surface (41).

8. The device according to claim 1, characterized in that the even surface (7) comprises at least one bore (14) communicatively connected in terms of flow with a channel (15), whereby the connections are bores and/or flexible lines.

9. The device according to any one of the preceding claims, characterized in that on its jacket surface, the multi-level part (8) comprises at least one edge (18) serving for opening and closing at least one channel (19).

10. The device according to any one of the preceding claims, characterized in that the concentric channel (15) is radially communicatively connected in terms of flow with two bores (19, 20) leading up to the jacket surface (31') of the multi-level part (8).

11. The device according to claim 10, characterized in that the longitudinal axes (26, 27) of the bores (19, 20) are not arranged in one plane.

12. The device according to any one of the preceding claims, characterized in that the jacket surface (31) of the second section (31) of the multi-level part (8) has a groove-like puncture (39) extending over the circumference of the jacket surface in the form of a ring.

13. The device according to any one of the preceding claims, characterized in that the clamping of the label (2) and/or protective film (3) is effected either by the compliance of the label (2) and/or protective film (3) or by the yieldingness of the jacket surface (31') of the second level (31) of the multi-level part (8).

14. The device according to claim 13, characterized in that the jacket surface (31') of the second level of the multi-level part (8) comprises at least one radially flexible element (46).

15. A device for attaching labels (2) and/or protective films (3) to the side (6) of a compact disc (5) or credit card CD (5') or DVD CD (5'') opposing the side carrying the information, comprising a flat base body (1') with an even surface (7), said surface being penetrated by a multi-level part (8'') displaceable in the axial direction and engaging the center hole (10, 11, 12) of the label (2) and/or protective film (3) and of the compact disc (5, 5', 5'') to be labeled, characterized by an annular disk (40) whose inside diameter (D1) corresponds with the diameter of the second level section (31) and whose outside diameter (D2) is slightly larger than the diameter of the central hole (10, 11) of the label (2) and/or protective film (3) to be applied, so that the center hole (10, 11) of the label (2)

and/or protective film (3) to be applied engages the jacket surface (31') of the annular disk (40) in a clamping manner.

16. The device according to any one of the preceding claims, characterized in that the diameter of the second cylindrical part section (31, 31') and the diameter (D2) of the annular disk (40) are by 0.02 mm to 0.20 mm larger than the diameter of the center hole of the labels (2) and/or protective films (3).

17. The device according to any one of the preceding claims, characterized in that below the second section (31), the multi-level part (8) has a third cylindrical section (32) stepped off by an edge (18'); and that the diameter (D2) of the third level section (32) is variable between 13 mm and 45 mm.

18. The device according to claim 15, characterized in that the base body (1') has a round recess (33') in which the cylindrical section (32) is guided in an axially displaceable manner.

19. A method for attaching labels (2) and/or protective films (3) to the side (6) of a compact disc (5) or a credit card CD (5') or a DVD CD (5'') opposing the side carrying the information, characterized by the following steps of the method:

- Putting the label (2) and/or protective film (3) to be applied with the side (38) opposing the adhesive coating (37) on the even surface (7) of a base body (1, 1') penetrated by a multi-level part (8), the second level section (31) of which engaging the center hole (10, 11) of the label (2) and/or protective film (3) in a clamping manner; and
- lowering of the compact disc (5, 5', 5'') onto the slightly curved adhesive coating (37) of the label (2) and/or protective film (3).

20. The method according to claim 19, characterized in that the label (2) and/or the protective films (3) are pulled onto the even surface (7) of the base body (1, 1') by means of vacuum.

21. The method according to claim 19, characterized in that the compact disc (5, 5', 5'') is lowered onto the adhesive coating (37) by applying pressure to the multi-level part (8).

22. The method according to claim 19, characterized in that due to the lowering of the multi-level part (8), the vacuum in the channels (14, 15, 20) is broken, so that the label (2) or the protective film (3) no longer adheres, and the compact disc (5, 5', 5'') glued with the label (2)

and/or the protective film (3) is lifted from the even surface (7) of the base body (1, 1') due to the spring effect of the elastic element (21).

23. The method according to any one of the preceding claims, characterized in that if a protective film (3) is used whose adhesive coating is pointing upwards, the label (2) is guided in a curved form with its imprinted side onto the adhesive coating (37) of the protective film (3) in such a way until it rests thereon in a straight line; and that the upwards pointing ends of the label (2) are subsequently lowered.

24. A method for adapting the diameter (D2) of the second level section (32) of the multi-level part (8) displaceable in the axial direction, characterized in that an annular disk (4) is placed on the top side of the third level section (32), the inside diameter (D1) of said annular disk corresponding with the outside diameter of the second level section (31) and the outside diameter D2) of said annular disk approximately corresponding with the inside diameter of the label (2) and/or protective film (3) to be attached.

25. The device according to any one of the preceding claims, characterized in that the even surface (7) comprises at least one pluggable positioning element (43) keeping the

label (2) and/or the protective film (3) and the credit card CD (5') in a preset position.

26. The device according to claim 25, characterized in that the pluggable positioning elements (21) comprise a conical segment (46).

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(12) NACH DEM VERTRAG ÜBER DIE INTERNATIONALE ZUSAMMENARBEIT AUF DEM GEBIET DES  
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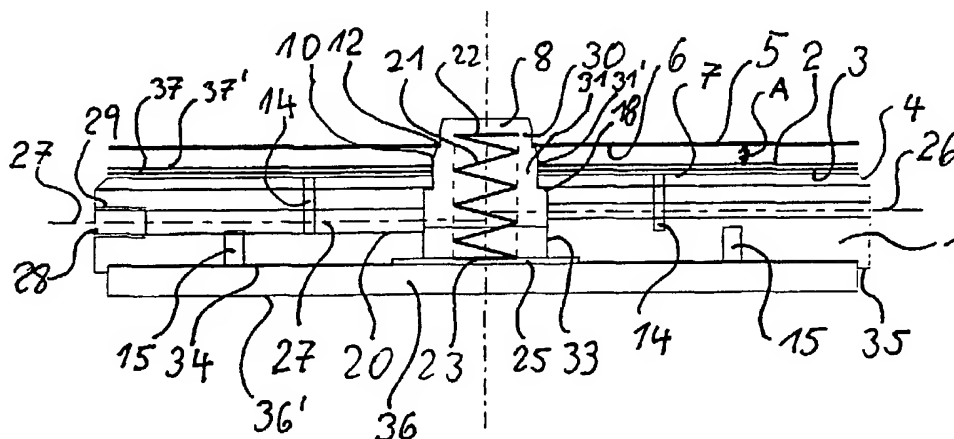
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[Fortsetzung auf der nächsten Seite]

(54) Title: DEVICE AND METHOD FOR STICKING A LABEL TO A COMPACT DISK (CD)

(54) Bezeichnung: VORRICHTUNG UND VERFAHREN ZUM BEKLEBEN EINER COMPACT-DISC (CD) MIT EINEM ETIKETT



WO 01/17860 A1

(57) Abstract: The invention relates to a device for sticking a label (2) and/or a protective film (3) to a compact disk (5) or a credit card CD (5') or a DVD CD (5''). The labels contain individual markings which are especially suitable for the use of small quantities of compact disks (5). The inventive device consists of a flat base body (1, 1') with an even surface (7). A centrally positioned, multi-level part (8) performs several functions, especially accurately centring the labels (2) and/or the protective films (3) to be applied.

(57) Zusammenfassung: Mit der vorliegenden Erfindung wird eine Vorrichtung zum Bekleben einer Compact-Disc (5) oder einer Scheckkarten-CD (5') oder einer DVD-CD (5'') mit einem Etikett (2) und/oder einer Schutzfolie (3) vorgestellt. Die Etiketten enthalten individuelle Beschriftungen, die insbesondere für den Gebrauch kleiner Mengen von Compact-Discs (5) geeignet sind. Die erfindungsgemäße Vorrichtung besteht aus einem flachen Grundkörper (1, 1'), der eine ebene Fläche (7) aufweist. Ein mittig positioniertes mehrstufiges Teil (8) erfüllt dabei mehrere Funktionen, wozu insbesondere das genaue Zentrieren der aufzubringenden Etiketten (2) und/oder Schutzfolien (3) zählt.



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My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

**DEVICE AND METHOD FOR STICKING A LABEL TO A COMPACT DISC (CD)**

the specification of which (check only one item below):

☐ is attached hereto.

☐ was filed as United States application

Serial No. \_\_\_\_\_

on \_\_\_\_\_,

and was amended

on \_\_\_\_\_ (if applicable).

☒ was filed as PCT international application

Number PCT/DE00/03064

on 6 SEPTEMBER 2000,

and was amended under PCT Article 19

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I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, §1.56(a).

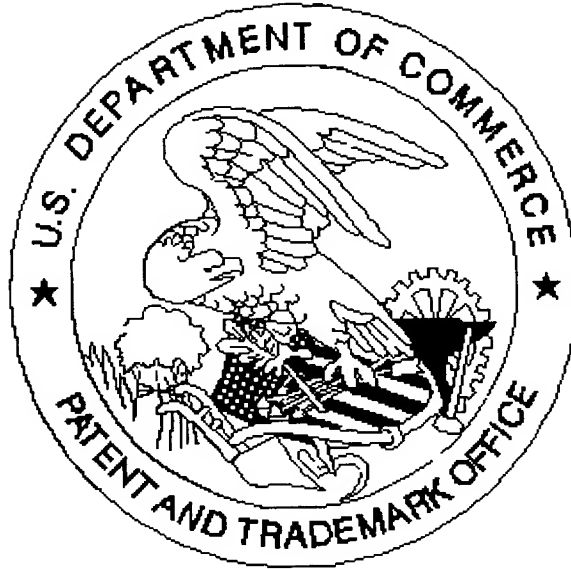
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COUNTRY (if PCT, indicate "PCT")	APPLICATION NUMBER	DATE OF FILING (day, month, year)	PRIORITY CLAIMED UNDER 35 U.S.C. 119
GERMANY	199 42 471.3	6 SEPTEMBER 1999	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
GERMANY	199 54 496.4	11 NOVEMBER 1999	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
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